

describes and extols a snare recently devised by him for the removal of lymphoid hypertrophies and other growths from the vault of the pharynx.

It is a guarded snare, shaped on the model of Gottstein's curette, and, of course, acts automatically once the instrument is placed in position. There is no hemorrhage other than that produced by the contact of the instrument against the tissues.

This instrument can hardly ever be used upon children under nine or ten years of age.

Paralysis of the Inferior Laryngeal Nerve.—In the Physiological Section of the *Archiv für Anatomie und Physiologie*, 1899, PROF. H. KRAUSE, of Berlin, details some recent experiments upon animals which support Grossman's theory that the median position of the vocal bands in paralysis of this nerve is due entirely to the unimpaired function of the cricothyroid muscle.

HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF

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Food Poisoning.—An outbreak of meat poisoning due to imperfectly cooked veal pies is reported in detail by Drs. J. B. WILKINSON and HAROLD ASHTON, and has been the subject of considerable investigation and speculation by Dr. HERBERT E. DURHAM (*Public Health*, January, 1899, and *British Medical Journal*, December 17, 1898). All the cases, somewhat over fifty in number, presented very similar symptoms, the chief of which were severe and uncontrollable vomiting and diarrhoea, accompanied at first by shivering, and followed by collapse. In some there were violent abdominal pains, and in several the abdomen was swollen and tender. Many had severe pains in the back. The symptoms began in from five to fourteen hours after eating, and, as a rule, were severe from the start. The motions were first grass-green, then dark green, and highly offensive. The severity of the diarrhoea increased on the second day; one patient was purged forty or more times in a single day. In very few cases the dejecta contained a little blood. In the worst cases the patients became semi-comatose, restless, and delirious in the course of a few hours. Occasionally there were disturbances of vision, which lasted until the temperature, which ranged from 100° in the mildest to 104.5° in the severest cases, became normal. The pulse was very rapid, weak, and dicrotic. In many cases the patient was markedly cyanotic and had some difficulty in breathing. Some had

cramps, and nearly all had muscular pain and stiffness. In very many cases herpes appeared about the lips on the third to the sixth day, and some had a rash, followed by desquamation. Convalescence in the severe cases was very prolonged; some were still weak, even after three and a half months. Four cases terminated fatally, and in two of these autopsies were secured. The brain surface showed slight congestion; the small intestines showed congested patches, which became larger and more numerous lower down, and did not correspond with Peyer's patches. The whole lower third was highly congested and contained blood and bloody mucus. The large intestine also was highly congested, and contained some yellow, diarrhoeic fluid. Otherwise the organs of the body were found to be in a fairly healthy condition.

Investigation of the cause of the outbreak yielded the following facts: On Tuesday, July 26th, an apparently healthy calf was slaughtered, and two days later the forequarter and breast were delivered to a baker, who made the meat into the pies which were shown to be the cause of the outbreak. Other portions of the animal were sold to others who made pies which caused no trouble. A portion of a knuckle end, which was still in the possession of the butcher when the investigation was begun, was to all appearances perfectly good meat. The baker to whom the trouble was traced came, on the day he received the meat, 160 veal pies and 108 pork pies. The pastry was the same for the entire lot, and both kinds were treated to the same lot of jelly, which was made by boiling the veal bones with two pigs'-feet in four quarts of water. Inasmuch as the pork pies caused no disturbance of any kind, no responsibility could be attached to the pastry or to the jelly. The veal pies were baked in not less than three nor more than five batches, hence the batches would have included about thirty-two, forty, or fifty-three pies. The time occupied in baking each batch was said to be about twenty minutes. The number of persons affected was somewhat over fifty; and as in some cases single pies were shared by two, three, and four persons, it is obvious that less than fifty pies produced all the trouble. Since no other parts of the animal produced any sickness, there can be no doubt that the contamination of the meat occurred after the sale and delivery. According to the findings of Dr. Durham, based on a study of the blood of a number of the patients as to the behavior of the serum when tested for clumping properties with various micro-organisms, with controls of serum from normal persons, the outbreak was due to the bacillus enteritidis. This limitation of the inquiry was necessitated by the fact that it was impossible to secure either one of the pies or part of one or any of the first vomitings. The conclusion arrived at, strengthened by the fact that all four fatal cases were from pies which were two or more days old when eaten, which period allowed enormous multiplication, makes most probable the further conclusion that one whole batch was so insufficiently cooked as to preclude the killing of the organisms, which, according to Basenau, cannot survive exposure for one minute to a temperature of 70° C.

Another outbreak, which is likewise to be attributed to insufficient cooking of infected material, is recorded by Dr. F. W. ANDREWES (*The Lancet*, January 7, 1899). In this the offending food was rice pudding, which caused eighty-six cases of diarrhoea in a single night in St. Bartholomew's Hospital,

the infecting agent being *bacillus enteritidis sporogenes*. Three different outbreaks of diarrhoea have occurred within recent years in this institution: the first and second involved fifty-nine and 146 patients, respectively; the third (the one under consideration), eighty-six. In all three epidemics the great majority of attacks have been mild—merely abdominal pain followed by a few loose movements. In a few of the more severe cases the discharges have contained mucus and blood. On each of the three occasions there were instances of abdominal pain alone and a general tendency to looseness of the bowels. In the first two outbreaks no special article of food could be incriminated, but the third was shown by many facts and coincidences to be due undoubtedly and incontestably to rice pudding, and to nothing else. In the first outbreak Klein found in the patients' stools a peculiar spore-bearing anaerobic bacillus, which he named *bacillus enteritidis sporogenes*, which most nearly resembles *bacillus butyricus*. It is intensely virulent when inoculated subcutaneously in guinea-pigs, and recent milk-cultures are the most virulent. It is a common saprophyte, and is probably consumed habitually in milk, in which it is very commonly detected, with no deleterious results; yet under certain unknown circumstances it becomes highly pathogenic. It was found in the stools of all those affected in the second outbreak and in the milk supplied on the day previous. In the third outbreak stools were taken from three patients at random, and were found to contain the organism. Cultures made in milk heated to 80° C. proved to be highly virulent. Guinea-pigs inoculated in the groin at the end of forty-eight hours with 1 c.c. of whey died in less than two days—one in twenty-one hours. All showed intense hemorrhagic œdema and gangrene spreading over the abdomen and thorax, and in all the organism was found in the blood and in the spleen. It was not possible to obtain any of the milk, as it had been used up or thrown away; but a part of a pudding was found and examined. It was sour in smell and acid to litmus; it yielded bacilli, which, while not so intensely virulent as those found in the stools, were, nevertheless, undoubtedly the same organism. Tests in the kitchen showed that the temperature reached in the preliminary preparation of the materials of the pudding ranged from 70° to 85° C., and in the final baking from 90° to 98° C., which is insufficient for killing the spores of the organism, which are among the most resistant known and can withstand a temperature of 100° C. for a considerable time.

Effect of Cider on Microbes.—Since cider is often adulterated with water which may be contaminated with sewage, and hence may contain the typhoid organism, M. BODIN (*Revue Scientifique*, December 17, 1898) has made some experiments to determine whether these can live and preserve their virulence in that beverage. Cultures of the bacilli were treated with cider, and at the end of twelve to eighteen hours all were found to have been killed. As the organism, according to Berthelot, can develop in media as acid as cider, the question arises whether the destructive agent is not the aldehyde, which is always to be detected in some amount in beers, wines, and cider.

Disinfectant Properties of Ordinary Soaps.—According to PROFESSOR A. SERAFINI (*Archiv für Hygiene*, xxxiii. p. 369), who has been making a

study of the subject, soaps, whether hard or soft, possess a fairly high disinfectant power, which is not to be attributed either to the base or to the fatty acid, but to the resulting combination of the two. The free alkali content is ordinarily such that even in concentrated soap solutions it can exert no disinfecting action whatever. Since filtered and unfiltered soap solutions have the same power, it may be concluded that the disinfectant property resides alone in the soluble portions, and this property is naturally diminished by anything which tends to precipitate the soap from its solution. It is also influenced by temperature in two ways: first, by reason of the fact that disinfectants in general are more active at high temperature; and, second, that increase in temperature causes increased solubility. As the property is inherent in the salts of the fatty acids, anything which diminishes their relative amount, as foreign substances or high percentage of contained water, lessens the power of the soap to disinfect; hence the so-called rosin soaps which are very common in the market have proportionately less action the higher their percentage of salts of the rosin acids.

In the ordinary washing of clothes soaps can exert but little disinfection, because of the many factors which cause a diminution of their power, among which the hardness of the water is one of the most important. In general, if one is obliged by lack of other means, or on account of economy, to employ soap in the practice of disinfection, it is best to avoid soft soaps, since they contain a large amount of water, besides glycerin and all the impurities of the fats and alkali from which they are made—objections which do not apply in the same degree to hard soaps. One will do well to distrust the ordinary colored soaps, especially the green, yellow, and brown, which are more than likely to contain rosin. Those on which one may most safely depend are the hard white and marbled Marseilles, or castile soaps, since they contain no rosin and but little water. If soaps must be employed as disinfectants they should be used in concentrated solutions at a temperature of 30°–40° C., and the objects treated should be immersed a number of hours therein.

Tuberculous Meat.—According to the official returns of the Leipzig abattoir for 1897, 36.40 per cent. of the 27,191 cattle slaughtered were more or less tuberculous. Nearly half (48.09 per cent.) of the cows were affected, while but a fifth (20.49 per cent.) of the bullocks and heifers gave evidence of the disease. Notwithstanding the large number of infected animals, only 2.08 per cent. were totally condemned as food. Of those more or less infected but passed as fit for food—that is, 97.92 per cent., all but a very small number were allowed to be sold without any restrictions after the removal of the organs affected. The balance, 5.73 per cent., were first sterilized or sold as of second quality. Only eight sheep out of 49,559 were tuberculous. Of the swine, 132,062 in number, 2.78 per cent., and of the calves, 67,961 in number, 0.20 per cent., were more or less diseased.

Scarlet Fever in Swine.—The disease known as rothlauf in Germany, and rouget in France, is in England (and America?) often called pig scarlatina, on account of the bright-red eruption on the skin; but incorrectly so, since the constant presence of lesions of the intestine show it to be a disease *sui*

generis, and more akin to typhoid. But BEHLE has reported a remarkable and, so far as we know, unprecedented instance of the participation of swine in an outbreak of scarlatina in Germany. He states that while the children at a number of farm-houses and cottages were suffering from scarlatina of a severe type, the pigs were attacked by a highly infectious and fatal fever, the symptoms and post-mortem appearances of which were identical with those of scarlatina in man, viz., angina, erythema, followed, in those that recovered, by desquamation, œdema of the extremities, albuminuria, uræmia, and acute nephritis. A healthy animal at a house where none of the family had been attacked, having been inoculated with the blood of a child suffering from scarlet fever, died at the end of a week with symptoms and lesions indistinguishable from those of the human disease and from those of the pigs that had presumably contracted it from the inhabitants, though whether through actual contact or, as is highly probable under the conditions of village life, through the ingestion of their excreta, we have no means of knowing.

[There is little doubt that cows are susceptible to scarlatina and that the disease may be reconveyed to man by the consumption of their milk, but owing to histological differences the external appearances are greatly modified. The susceptibility of any of the lower animals to diseases proper to man, as of rats to the plague and of cats to diphtheria, is of great interest not only from a purely scientific stand-point, and as bearing on the propagation of the infection, but as affording opportunities of studying the etiology and prophylaxis of the disease *in corpore vili*. This can be done most satisfactorily when the character of the skin, etc., permits of the morbid processes taking the same appearances, which is rarely the case. One cannot reasonably expect a finely punctated erythema on the hairy hide of the cow, and it is impossible to imagine the eruptions of scarlatina or the pustules of smallpox on that of an elephant or rhinoceros, though one may conceive of these animals being susceptible to the virus.—E. F. W.]

PATHOLOGY AND BACTERIOLOGY.

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Scarlet Fever.—PEARCE ("Scarlet Fever: Its Pathology, Histology, and Bacteriology," *Medical and Surgical Reports, Boston City Hospital*, 1899) has made thorough gross, histological, and bacteriological examinations in twenty-one cases of scarlet fever in which a complete post-mortem examination was possible. Nothing was observed which would indicate the etiology of the disease.